

# Surveillance and Broadcast Services

## ADS-B Overview

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Federal Aviation  
Administration



# Agenda

- **Realizing Next Generation Air Transportation System (NextGen)**
- **Background**
- **Dual Track Strategy**
- **Acquisition**
- **Critical Services Schedule**
- **Next Steps**



# Realizing NextGen

## Current Programs

ERAM

TFM-M

STARS/CARTS

RNP/RNAV

Airspace Mgmt Program

**Initial ADS-B**

Initial SWIM

## Key Near-Term Investments

**ERAM Enhancements**

*Automated Problem Resolution*

**Concept Demonstrations**

*Trajectory-Based Ops/High Density*

**Infrastructure**

*Robust Flow of Information*

**TFM-M Enhancements**

*Time-Based Metering*

**Terminal Enhancements**

*Merging and Spacing Tools*

**RNP/RNAV Expansion**

*Precise Navigation*

**Data Communications**

*Flight Intent Downlink*

**ADS-B**

*Aircraft Separation*

**SWIM/Net-Enabled Weather**

*Net-Centric Information Sharing*

## NextGen

**Trajectory-Based Operations**

**Aircraft Data Communications**

**Performance-Based  
Operations and Services**

**Separation Management**

**Collaborative TFM**

**Precision Navigation**

**Weather Integration**

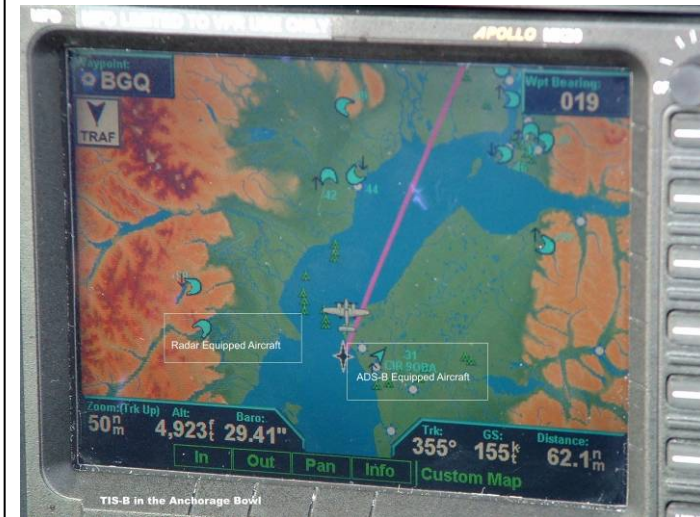
**Surveillance Services**

**Network-Centric  
Information Sharing**



# Background: Traffic Information Service - Broadcast / Flight Information Service - Broadcast

**TIS-B is a service which provides ADS-B equipped aircraft with position reports from secondary surveillance radar on non-ADS-B equipped aircraft.**



**FIS-B transmits graphical National Weather Service products, temporary flight restrictions (TFRs), and special use airspace.**



# Background: Automatic Dependent Surveillance - Broadcast (ADS-B)

- **Automatic**
  - Periodically transmits information with no pilot or operator input required
- **Dependent**
  - Position and velocity vector are derived from the Global Positioning System (GPS)
- **Surveillance -**
  - A method of determining position of aircraft, vehicles, or other asset
- **Broadcast**
  - Transmitted information available to anyone with the appropriate receiving equipment

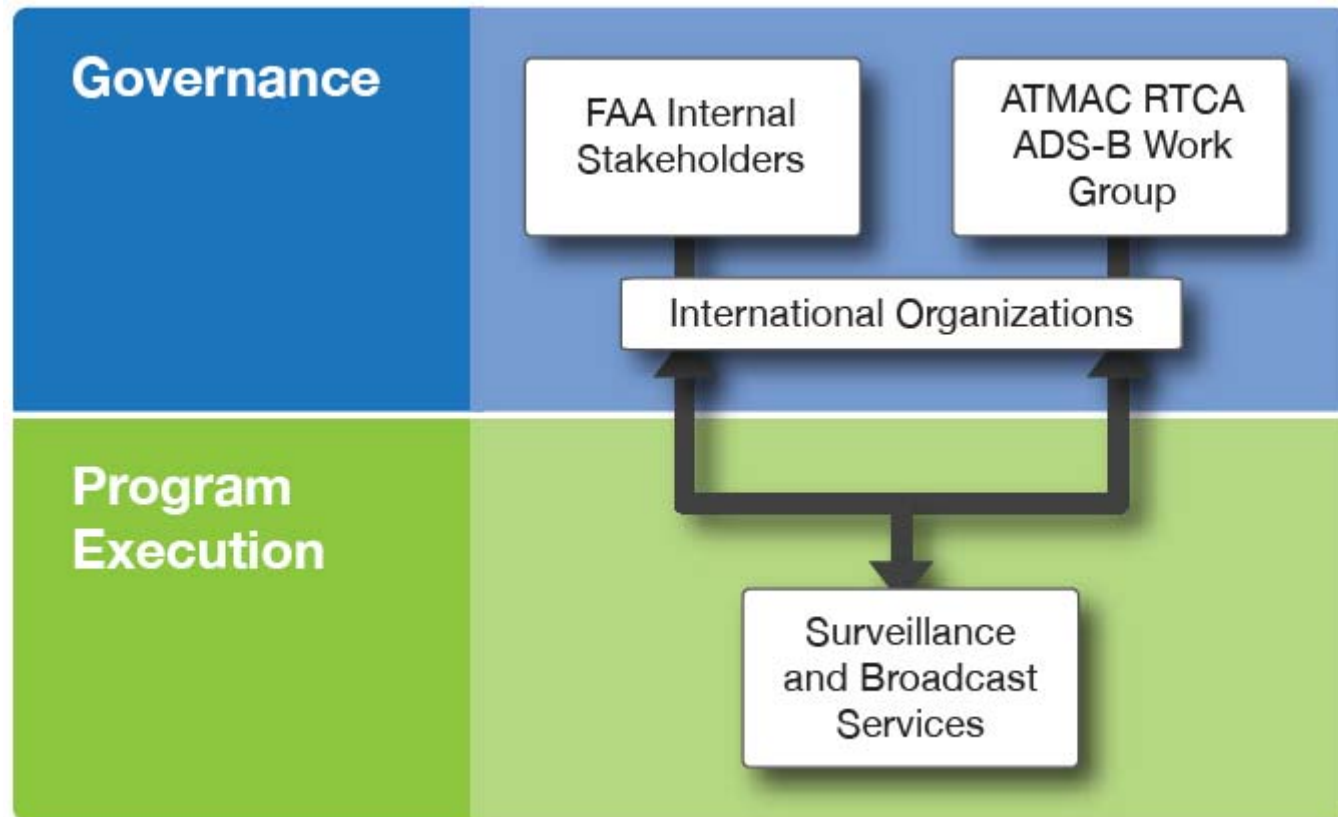




# Background: Program Objective

- **Develop a multi-segment, life cycle managed, performance based ADS-B strategy that aligns with the Next Generation Air Transportation System (NextGen) vision and generates value for the National Airspace System (NAS)**
  - Integrate Concept of Operations for Portfolio of ADS-B Applications
  - Develop Application Life Cycle Management Approach
  - Establish Infrastructure
  - Continuously Monitor Value and Adjust Investments

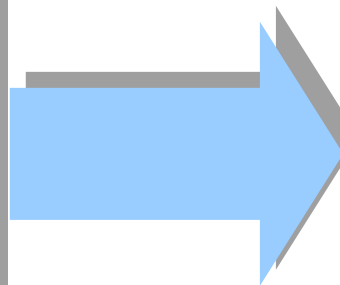
# Background: Program Governance



# ATMAC ADS-B Workgroup

## Member Affiliation:

- Federal Aviation Administration
  - Air Transport Association
- Joint Planning and Development Office
  - RTCA, Inc.
- Air Line Pilots Association
- Regional Airline Association
  - Rockwell Collins
  - United Parcel Service
- Aircraft Owners and Pilots Association
- National Business Aviation Association
  - United States Air Force
    - MITRE / CAASD
  - The Boeing Company
  - Federal Express
- Helicopters Association International



## Products:

- Aviation Rulemaking Committee (ARC)
- Industry / FAA Tasking
- ADS-B Performance Control Board



# International Harmonization

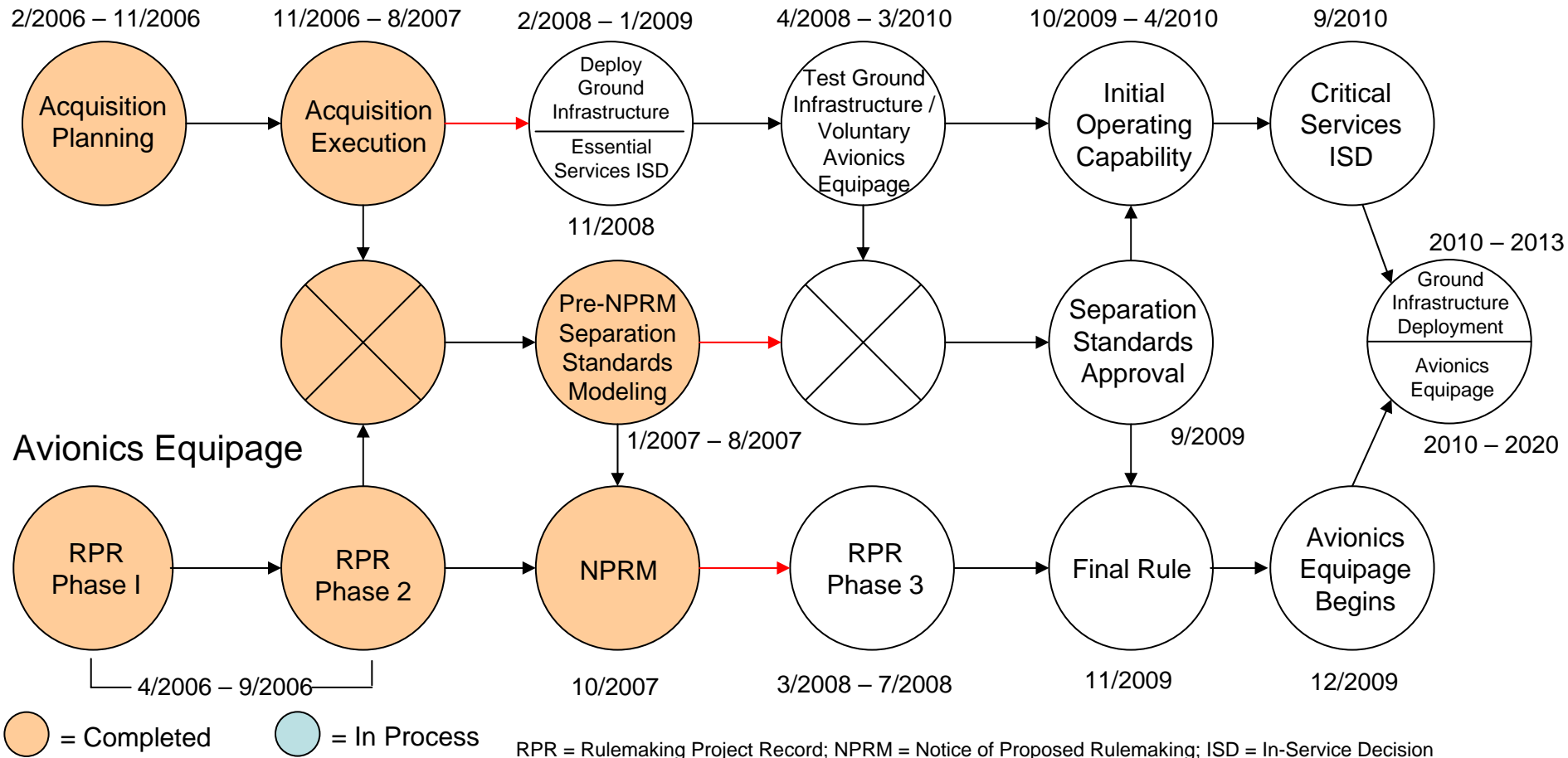


- **International Civil Aviation Organization (ICAO)**
  - Aeronautical Surveillance Panel (ASP)
  - Separation and Airspace Safety Panel (SASP)
  - Caribbean and South American Regional Planning and Implementation Group (GREPECAS)
  - Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG)
- **Eurocontrol**
  - CASCADE: ADS-B is main focus of CASCADE, standardization, trials and implementation activities are being funded, and it is the largest EUROCONTROL partner in terms of budget and staff
  - Action Plan 23: exchange information and ideas for the future
  - Airborne Separation Assistance System Thematic Network 2 (ASAS –TN 2): European Commission funded forum
- **Requirements Focus Group (RFG)**
  - Joint RTCA / EUROCAE Working Group
- **Recurring Coordination Meetings**
  - Transport Canada
    - NAV CANADA
  - Civil Aviation Safety Authority
    - Airservices Australia
  - Eurocontrol



# Background: Dual Track Strategy

## Ground Infrastructure

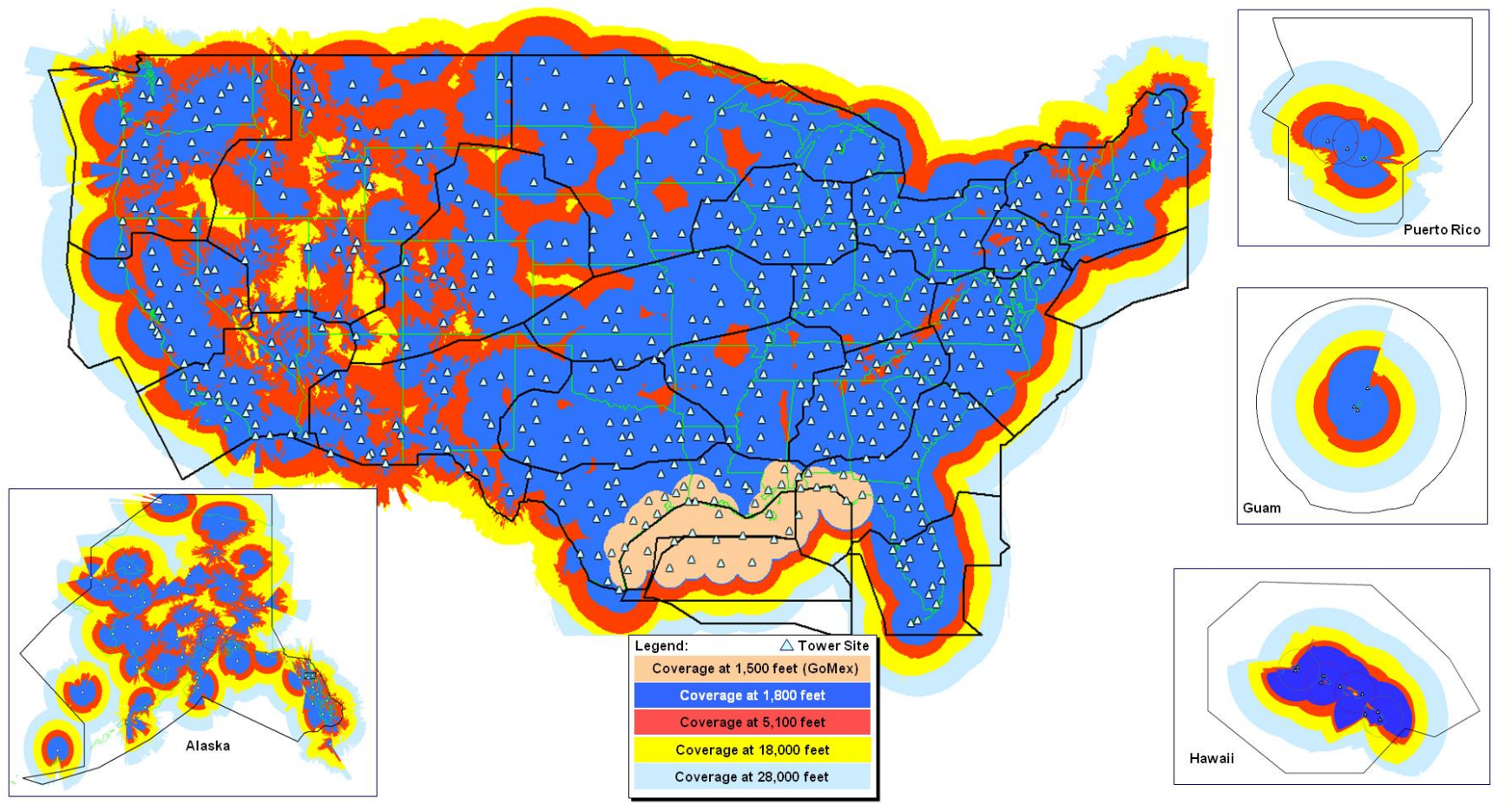


# Acquisition

- **In August 2007, the FAA awarded the ADS-B national contract to ITT, Corp. as the prime contractor**
  - Subcontractors include AT&T, Thales, WSI, SAIC, PriceWaterhouseCoopers, Aerospace Engineering, Sunhillo, Comsearch, MCS of Tampa, Pragmatics, Washington Consulting Group, Aviation Communications and Surveillance Systems (ACSS) and NCR Corporation
  - In addition, ITT has partnered with L-3 Avionics Systems and Sandia Aerospace
- **Accomplishments to date:**
  - Post Award Conference
  - System Requirements Review
  - Technical Interchange Meetings (3)
  - Integrated Baseline Review
  - Preliminary Design Review
- **Near term goals:**
  - Critical Design Review: February 2008
  - Factory Acceptance Test: March 2008
  - Broadcast Services Site Acceptance Test: May 2008
  - Initial Operating Capability of Broadcast Services: August 2008
  - In Service Decision of Broadcast Services: November 2008



# 794 Ground Station Solution Provides National Coverage



# Critical Services Schedule

Milestone	Projected Completion Date
Gulf of Mexico Comm. and Weather SAT	March 2009
Louisville SAT	April 2009
Gulf of Mexico SAT	June 2009
Philadelphia SAT	August 2009
Gulf of Mexico Comm. and Weather IOC	September 2009
Juneau SAT	October 2009
Louisville IOC of Surveillance and Broadcast Services	October 2009
Final Rule Published	November 2009
Gulf of Mexico IOC of Surveillance and Broadcast Services	December 2009
Philadelphia IOC of Surveillance and Broadcast Services	February 2010
Juneau IOC of Surveillance and Broadcast Services	April 2010
Surveillance and Broadcast Services ISD for ADS-B	September 2010



# Next Steps

- **ADS-B**

- Critical Design Review: February 2008
- Close of NPRM Comment Period: March 3, 2008
  - 60 day extension request from Air Transport Association (ATA) and Aircraft Operators and Pilots Association (AOPA)
- Factory Acceptance Test: March 2008

- **ADS-B (CSA)**

- Continue deployment of communications in the Gulf of Mexico
- Develop key platform agreements with existing industry partners
- Conduct offshore surveys for surveillance and weather deployment
- Develop Houston Center Airspace Plan to meet new demands for service

Meeting objectives through transparent interaction between the aviation community and the FAA